

REMARKS

Claims 1-9, 14-15, 17, 18 and 20 are pending in this application. Claims 1-9 and 20 are withdrawn from consideration. By this Amendment, claim 14 is amended to distinguish over the cited references. No new matter is added by this Amendment. Support for the language added to claim 14 can be found throughout the entire specification, for example at page 9, lines 27-29.

I. Rejections Under 35 U.S.C. §103(a)**A. JP 479 in view of Schonfelder**

Claims 14, 15, 17 and 18 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over JP 01-188479 ("JP 479") in view of U.S. Patent No. 5,746,969 ("Schonfelder"). This rejection is respectfully traversed.

The Patent Office alleges that JP 479 teaches all of the features recited in the present claims except for the use of oxides. The Patent Office introduces Schonfelder as allegedly teaching that a mixture of yttria and alumina is a particularly advantageous sintering aid. The Patent Office thus alleges that it would have been obvious to use both oxides to aid the sintering of JP 479 because it is allegedly advantageous to do so. Applicants respectfully disagree with the Patent Office's assertions.

Applicants submit that JP 479 and Schonfelder, in combination or alone, do not teach or suggest that the molar ratio of the yttrium oxide to the aluminum oxide (Y_2O_3/Al_2O_3) is in the range of from about 0.8 to 1.2, as recited in claim 14.

As admitted by the Patent Office, JP 479 does not teach or suggest the use of yttrium oxide and aluminum oxide. As such, JP 479 clearly cannot teach or suggest the molar ratio of Y_2O_3/Al_2O_3 . Schonfelder does not remedy this deficiency of JP 479.

Schonfelder nowhere teaches or suggests that the molar ratio of (Y_2O_3/Al_2O_3) is in the range of from about 0.8 to 1.2, as recited in claim 14. Instead, Schonfelder teaches in the

Examples that when yttrium oxide and aluminum oxide are both used as sintering aids, the amounts of each material used are such that the molar ratio of Y_2O_3/Al_2O_3 is 1.8 (see Example 1 of Schonfelder), which is significantly higher than the range recited in the present claims.

Moreover, one of ordinary skill in the art would not have looked to the dense silicon nitride materials taught by Schonfelder to modify the silicon nitride porous body taught by JP 479, as allegedly by the Patent Office. That is, as Schonfelder describes sintering aids for dense silicon nitride bodies, one would not have been led to have used such in the porous body of JP 479.

Further, contrary to the Patent Office's assertion, it would not have been obvious to perform routine experimentation to determine the optimal amounts of the various features recited in the present claims. Only result-effective variables can be optimized. See MPEP §2144.05. Applicants submit that the features recited in the present claims are not result-effective variables, and the Patent Office has failed to properly assert that each recited feature is a result-effective variable.

For the foregoing reasons, Applicants submit that JP 479 and Schonfelder, in combination or alone, do not teach or suggest all of the features recited in claims 14, 15, 17 and 18. Reconsideration and withdrawal of the rejection are thus respectfully requested.

B. JP 479 and Schonfelder, in view of Kingery

Claim 17 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over JP 479 and Schonfelder, and further in view of Kingery et al., "Introduction to Ceramics," second edition ("Kingery"). This rejection is respectfully traversed.

The Patent Office alleges that Kingery teaches that particle size is one of the most critical factors in ceramics processing. The Patent Office thus alleges that it would have been

obvious to perform routine experimentation to determine the optimal particle size for the yttria.

Applicants submit that Kingery does not remedy the deficiencies of JP '479 and Schonfelder. Kingery also does not teach or suggest that the molar ratio of the yttrium oxide and the aluminum oxide (Y_2O_3/Al_2O_3) is in the range of from about 0.8 to 1.2, as recited in claim 14.

For the foregoing reasons, Applicants submit that JP 479, Schonfelder and Kingery, in combination or alone, do not teach or suggest all of the features recited in claim 17. Reconsideration and withdrawal of the rejection are thus respectfully requested.

II. Rejoinder

Applicants submit that upon allowance of elected claims 14, 15, 17 and 18, withdrawn claims 1-9 and 20 should be rejoined and similarly allowed.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-9, 14-15, 17, 18 and 20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

Leana Levin

James A. Oliff
Registration No. 27,075

Leana Levin
Registration No. 51,939

JAO:LL/hs

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OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

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